EXHIBIT 2

Redacted Version of Document Sought to be Sealed

IN THE UNITED STATES DISTRICT COURT

FOR THE NORTHERN DISTRICT OF CALIFORNIA

SAN JOSE DIVISION

- - -

CHASOM BROWN, WILLIAM	:	Case No.
BYATT, JEREMY DAVIS,	:	
CHRISTOPHER CASTILLO	:	5:20-cv-03664-
and MONIQUE TRUJILLO,	:	LHK
individually and	:	
on behalf of all other	:	
similarly situated,	:	CONFIDENTIAL
	:	
Plaintiffs,	:	
	:	
v.	:	
GOOGLE, LLC,	:	
	:	
Defendant.	:	

- - -

Wednesday, June 16, 2021

- - -

Videotaped 30(b)(6) deposition of

GLENN BERNTSON held pursuant to notice,

beginning at 10:27 AM, on the above date,

and recorded stenographically by

Constance S. Kent, a Certified Court

Reporter, Registered Professional

Reporter and Notary Public.

*   *   *

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1      APPEARANCES, continued
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11     Chris Thompson, 233 Analytics, LLC
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13     Noah Fox, Trial Technician
14
15
16
17
18
19
20
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22
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24
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1            - - -
             I N D E X
2            - - -
3      Testimony of: GLENN BERNTSON
4      By Mr Mao              9
       By Mr Broome          372
5      By Mr Mao             378
6
             - - -
7          E X H I B I T S
             - - -
8
       NO       DESCRIPTION        PAGE
9
       Exhibit 1  Plaintiff's Notice of    10
10         30(b)(6) Deposition
11     Exhibit 2  Confidential-Google      15
           Display Server for
12         ████ by ████████,
           Bates
13         GOOG-BRWN-000029458
14     Exhibit 3  Highly             107
           Confidential-Document
15         Entitled Fantastic
           Identifiers and Where to
16         Find Them, Bates
           GOOG-BRWN- 00078278
17         through 78385
18     Exhibit 4  Confidential-Document   124
           entitled ████, Bates
19         GOOG-BRWN- 00027305
           through 27313
20
       Exhibit 5  Confidential-Document,   193
21         http://g████████-
           coverage-ratio,
22         GOOG-BRWN-00026161
           through 26168
23
24
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1      NO       DESCRIPTION        PAGE
2      Exhibit 6  Highly Confidential-    222
           Document entitled
3          Biscotti Identifiers,
           Bates GOOG-BRWN-00078361
4          through 78363
5      Exhibit 7  Highly Confidential-    258
           Document entitled ████
6          ████, Bates
           GOOG-BRWN-00078370
7          through 78371
8      Exhibit 8  Confidential-Document    302
           entitled Logs Sources
9          and Access Types, Bates
           GOOG-BRWN-00029445
10         through 29453
11     Exhibit 9  Confidential-Document    312
           entitled Chrome Logs,
12         Bates GOOG-BRWN-
           00029381 through 29385
13
       Exhibit 10  Highly Confidential-    335
14         Document entitled
           Unified ID Linkage
15         Service, Bates
           GOOG-BRWN-00078389
16         through 78390
17     Exhibit 11  Confidential-Document   350
           entitled Google
18         Analytics, Backend Core
           Processing Pipelines,
19         GOOG-BRWN- 00078439
           through 78452
20
       Exhibit 12  Documents reviewed by   356
21         Mr Berntson in
           preparation for
22         deposition (not
           attached)
23
       Exhibit 13  Berntson Fact Sheet    357
24         (not attached)
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1 measurement; that is, if at some point a
2 Biscotti is sent in that we don't have
3 the Gaia ID, we're still able to
4 attribute, for example, that somebody
5 purchased something in relation to an ad
6 that was shown.
7   So [REDACTED] and my
8 understanding of it is specifically Gaia-
9 keyed sets of IDs that are used to
10 support inference about conversions cross
11 device.
12   Q.   So let's explore that for a
13 little bit. Generally as a use case, are
14 Google products allowed to blend the data
15 between Biscotti and Gaia?
16   A.   No.
17   Q.   Why is it in this case
18 [REDACTED] Group IDs are allowed to, I
19 don't know if you'd use the word
20 leveraged or linked, or whatever you
21 would choose, you know, for this
22 instance, why is it for the purposes of
23 conversion of ads you're allowed to use
24 both Gaia and Biscotti?

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1   A.   Google has a set of, as --
2 as you noted, policies that are meant to
3 prevent reidentifiability, prevent
4 joining of sort of sensitive IDs in terms
5 of, say, signed in and signed out. So
6 the vast majority of the way all of our
7 systems work, we maintain a very strict
8 separation.
9   The exception in this
10 particular case is because conversions
11 are always recorded in aggregate and
12 they're not associated to an individual
13 user, we're not leaking any data about an
14 individual user by being able to count
15 the number of conversions associated with
16 a given campaign.
17   And so [REDACTED] used in
18 this way is specifically has a carve out
19 set of permissions that are linked to the
20 fact that individual users are not being
21 tracked, only aggregate level insights as
22 it relates to conversions are being
23 provided.
24   Q.   Right. But a conversion is

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1 a one-to-one, right, it's the user -- the
2 Gaia user specifically has somehow
3 converted on an ad, it, you know, where
4 there was a Biscotti instead of a Gaia
5 ID; isn't that correct?
6   A.   The way that conversions are
7 surfaced and presented to advertisers, et
8 cetera is in aggregate. So an advertiser
9 will created a campaign that says, I'd
10 like to serve this 7-Up ad and here --
11 here are the criteria for where I want
12 the ad to show up, et cetera, and then if
13 they want to actually see how many people
14 then buy that soda because they saw the
15 ad, what we provide back to the -- the
16 advertiser is not a list of IDs of users
17 that converted, but just how many
18 conversions happened because of their
19 campaign. So --
20   Q.   Is that an exact count? But
21 that is an exact count that Google
22 provides, right, how many conversions?
23   A.   That is correct.
24   Q.   And that conversion is based

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1 off of both Gaia and Biscotti IDs; isn't
2 that correct?
3   A.   In the -- if a
4 [REDACTED] graph -- if the
5 [REDACTED] graph is used to be able to
6 make the imprints in terms of a cross
7 device conversion, then the answer is
8 yes.
9   Q.   Okay. And you charged the
10 advertiser a specific amount of dollars
11 based on the number of conversions; isn't
12 that correct?
13   A.   Advertising campaigns can be
14 set up based on a number of certain
15 criteria. It could be that if, let's
16 say, a brand-related campaign, it's the
17 number of impressions; that is, how many
18 people saw the ad. Conversions is simply
19 one of the metrics that an advertiser can
20 choose as the metrics associated with
21 what they pay.
22   Q.   Right. But for whether it
23 be for conversions or number of
24 impressions; in other words, whether it's

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1   MR. BROOME: Are you done?
2   Are you done, Mark?
3   MR. MAO: I am not done.
4   I'm reserving my rights.
5   MR. BROOME: You're done,
6   right? I mean, do you have -- let
7   me -- let me put it this way: Do
8   you have any more questions for
9   the witness to ask right now?
10   We're not bringing him back
11   because you want to reserve time
12   hypothetically.
13   MR. MAO: We are off the
14   clock, my clock. If you want to
15   go on your clock --
16   MR. BROOME: Yeah, I do.
17   I'm just asking are you done with
18   your questioning? It's a pretty
19   straightforward question. Are you
20   done with your questioning of this
21   witness?
22   MR. MAO: I'm reserving my
23   rights.
24   MR. BROOME: Reserving your

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1   rights for what?
2   MR. MAO: I'm reserving my
3   rights to ask additional questions
4   of a witness that's properly
5   prepared to testify to the topics,
6   including the topics which the
7   court had actually ordered.
8   MR. BROOME: Okay. But you
9   don't have any more questions for
10   Mr. Berntson?
11   MR. MAO: Disagree. I don't
12   know.
13   MR. BROOME: You don't know
14   if you have any more questions for
15   him?
16   MR. MAO: Steve, stop
17   burning my time.
18   MR. BROOME: Do you have any
19   more questions for Mr. Berntson?
20   MR. MAO: I'm pausing my
21   portion.
22   MR. BROOME: Okay. I'm
23   going to take that as a no.
24   Did -- can I -- can I ask my

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1   questions now? I'm going to take
2   your silence, your non-response as
3   a yes.
4   - - -
5   E X A M I N A T I O N
6   - - -
7   BY MR. BROOME:
8   Q.   Mr. Berntson, do you recall
9   that Mr. Mao asked you some questions
10   today about Google mapping Biscotti IDs
11   and ███████████ and conversion
12   tracking?
13   A.   Yes.
14   Q.   And I believe you testified
15   that mapping in ███████ requires a
16   Gaia ID; is that -- is that right?
17   A.   That is correct.
18   Q.   For the dataflow that's at
19   issue in this case where users are on
20   their browsers, they're signed out of
21   their Google accounts, they're in private
22   browsing mode, would there be any mapping
23   from Gaia to Biscotti?
24   A.   No, because when you go into

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1   private browsing mode, you start off with
2   a completely empty cookie jar. A
3   Biscotti is created, and if you don't
4   sign in to Google, there's no Gaia to map
5   that new Biscotti to. The Biscotti that
6   is present on the non-incognito browser
7   instance is not shared with the incognito
8   browser instance so there's no way of
9   creating that mapping from an incognito
10   session.
11   Q.   Okay. And -- and conversely
12   would there be any mapping from Biscotti
13   to Gaia under those same conditions?
14   A.   No. Again for similar
15   reasons, there is no Gaia to map that
16   Biscotti to.
17   Q.   Mr. Mao asked -- also asked
18   you a number of questions about the
19   X-Client-Data header.
20   Do you recall that?
21   A.   Yes.
22   Q.   Do you understand that the
23   plaintiffs in this case have proposed
24   that Google could use the absence of the

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```
 1    X-Client-Data header to identify users
 2    who are in incognito mode?
 3        A.   Yes.
 4        Q.    And does Google use the
 5    absence of the X-Client-Data header to
 6    identify users who are in incognito mode?
 7        A.   No.
 8        Q.    And would that be a good way
 9    to identify incognito users?
10        A.   No.
11        Q.    And why is that?
12        A.    Because there are cases that
13    will lead to false positives; that is,
14    where you see an empty X-Client-Data
15    header and you assume it's incognito but
16    not and false negatives where the reverse
17    is also true.  There are processes that
18    can result in empty client -- empty
19    X-Client-Data headers and to take an
20    empty client -- X-Client-Data header and
21    populate values.
22        Q.    Can you give us a couple of
23    examples?
24        A.    Sure.  For the first case
```

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```
 1    where there are instances where the
 2    X-Client-Data header is empty and it's
 3    not in incognito browsing, there -- there
 4    are quite a few different ways that that
 5    can happen.  One is if it's a new browser
 6    instance, no X-client header is present
 7    in any call out from the browser.
 8         The second is if you haven't
 9    used your browser for ▉▉▉▉ or more,
10    the X-client header data is considered to
11    be stale and just purged and no
12    X-Client-Data header is passed.
13         Another case is if the
14    variation IDs that are carried in the
15    X-Client-Data header, if too many are
16    returned to Chrome to prevent the
17    requests coming from Chrome from being
18    too large, they just delete them all and
19    so you'd see no X-Client-Data header.
20         Yet another permutation is
21    the presence of a firewall can also
22    prevent Chrome, the browser, from getting
23    the variation IDs that are used to
24    populate the X-Client-Data header, and
```

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```
 1    this is because the variation IDs are
 2    basically instructions as to what new
 3    features are enabled in the browser, and
 4    so Chrome, after it starts out, will make
 5    an asynchronous call to retrieve these
 6    data from the server, and if that server
 7    endpoint is blocked by a firewall, no
 8    X-Client-Data header is provided, none of
 9    the variation IDs.  So that's another
10    case where you can have an empty
11    X-Client-Data header.
12        Q.    Thank you.  That's very
13    helpful.
14         Mr. Berntson, do -- do you
15    understand that you have been designated
16    by Google to testify on topics, with the
17    exception of Topic No. 5 to which Google
18    objected to producing a witness, Topics 1
19    through 4 and 6 through 12?  You
20    understand that you've been designated to
21    testify on those topics?
22        A.   Yes, I do.
23        Q.    On behalf of Google?
24        A.   Yes, I do.
```

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```
 1        Q.    And -- and did you -- did
 2    you indeed prepare to testify on all of
 3    those topics?
 4        A.   I did.
 5        Q.    How much time do you think
 6    you spent preparing to testify on those
 7    topics?
 8        A.    At least 25 hours.
 9        Q.    And did you conduct
10    interviews with relevant subject matter
11    experts in order to educate yourself on
12    the topics for which you've been
13    designated?
14        A.   I did.  I interviewed eight
15    different people.
16        Q.    Okay.  And -- and did you
17    review documents in order to educate
18    yourself on the topics for which you've
19    been designated?
20        A.    Yes, and those have been
21    entered as Exhibits 12 and 13.
22        Q.    Okay.  And that's -- that's
23    a -- a binder of 61 documents by my
24    count; is that right?
```

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ERRATA SHEET FOR THE TRANSCRIPT OF

1 Case: Calhoun, et al. v. Google LLC
2 Deposition Date: June 11, 2021
3 Deponent: David Monsees
4

	Pg. and Ln.	Now reads	Should read	Reason
5				
6	27:21;			
7	174:12, 17;			
8	175:1;			
9	178:17;			
10	181:5;			
11	244:4, 15, 19, 21;			
12	253:14;			
13	309:22	STKs	SDKs	transcription error
14	28:11, 15;			
15	37:5;			
16	38:8;			
17	88:6, 10, 15;			
18	97:19;			
19	102:5;			
20	105:8;			
21	117:22, 23;			
22	118:1, 4;			
23	120:5, 14, 18;			
24	131:7, 8;	STK	SDK	transcription error

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cont	Pg. and Ln.	Now reads	Should read	Reason
1	158:4;			
2	172:19, 22;			
3	174:20, 23;			
4	175:6;			
5	176:3, 8, 9, 12, 18, 20,			
6	23;			
7	226:5;			
8	228:5;			
9	245:1, 2, 4, 13;			
10	254:21, 22;			
11	255:3, 8, 13, 15;			
12	256:19;			
13	274:7, 8, 10, 13;			
14	276:13;			
15	277:19;			transcription error
16	310:10	STK	SDK	
17	54:9, 11, 12, 14, 18, 19,			
18	23, 24;			
19	55:6, 10, 17; 56:3, 7, 9;			
20	58:3, 9;			
21	59:3, 5, 10; 61:4, 11,			
22	12;			
23	62:2, 8, 11, 13, 16, 17,	▮	▮	transcription error
24	22;			

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cont	Pg. and Ln.	Now reads	Should read	Reason
1	63:2, 3, 8, 10;			
2	65:24;			
3	66:2;			
4	68:24;			
5	69:2;			
6	71:13, 15;			
7	121:9, 10, 13;			
8	126:5, 15;			
9	243:4, 7;			
10	294:3, 4;			
11	298:20, 23;			
12	299:2, 4, 5;			
13	300:23;			
14	331:1, 3	▮	▮	transcription error
15	88:6	A, the	The	transcription error
16	107:10	00078278	00078378	transcription error
17	109:12	up-to-date	out-of-date	misspoke
18	157:19	If Biscotti	A Biscotti	transcription error
19	166:11;			
20	202:23;	conversation		
21	203:3; 15	s	conversions	transcription error
22	204:6	conversation	conversion	transcription error

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_____
Signature of Deponent

7/27/2021
_____
Date